THE PULVER REPORT: May 6, 1999

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"Heard on the Net"

- MGCP and SIP Continue to Gain VON Industry Support

During the past few weeks, the protocols MGCP and SIP have continued to gain momentum and attention in the VON marketplace with Service and Equipment Vendors. Between the efforts of the Packet Multimedia Carriers Consortium (PMCC), PacketCable and the recent SIP Bakeoff at Columbia University it looks like SIP and MGCP have gained mainstream support within the VON Industry.

- PacketCable Update

PacketCable is working on two protocol specifications. The first is a network based control that is similar to MGCP. The second is device based control that is SIP like. The objective is to determine the protocols need to provide IP telephony for their client customers. The goal is to create a common vendor neutral standard for all MSO's to interoperate. The work effort is being done by a mixture of Cablelabs personnel, vendor volunteers and Cable company contributors.

- Open Source VON Movement

Look for several organizations to offer Open Source versions of various protocol stacks within the VON Industry later this year.

- 1999 is the year NextGen Telcos Go Public.

The first one to make this announcement is Delta Three.
RSL Communications recently announced that they will be selling to the
public shares in Delta Three. In the coming weeks I would also expect
Howard Jonas to announce that he is going to be selling shares in
Net2Phone to the public.

- AT&T Continues to invest Billions in Cable Telephony

With their merger with TCI completed, AT&T has continued to be aggressive
in purchasing Cable companies within the United States. I have no
doubt whether or not AT&T will be able to deliver highly scalable fault
tolerant telephony services to their cable customers. My only question
is whether or not they can convince home owners to rely on their cable
service for their primary phone service.

- Spring '99 VON News

There were over 50 news releases made during Spring '99 VON. For a recap of
the announcements from the conference, please visit: http://pulver.com/news.

pulver.com posts IP Telephony news daily at http://pulver.com/news. If
you would like to subscribe to our weekly IP Telephony News newsletter,
please visit: (http://pulver.com/news/subscribe.html)

Recap: Spring '99 Voice on the Net

Spring '99 Voice on the Net took place at the Rio Hotel in Las Vegas from
April 13-16, 1999. I'd like to personally thank all of the 300+ speakers
who contributed to the conference and helped shape it's success. I'd
also like to thank all of the conference sponsors and exhibitors for
taking part in the conference. And, I'd be remiss if I didn't also
acknowledge the significant contribution of the growing pulver.com staff
that put in months of work leading up to the conference and what felt
like weeks of work while they were on-site in Las Vegas.

During Spring '99 VON, the Industry got together and had the chance to
listen to a collective progress report from vendors and service
providers alike. As a matter of fact, this was the first VON
conference where the Service Providers clearly outnumbered the vendors,
and for good reason. The industry is at a point where development has
turned into implementation, and all parties are interested in not only
emulating the PSTN but in envisioning a day when they can surpass the PSTN
in regards to audio quality, feature functions and end user ease of
use. Pretty amazing to think that in September, 1996 we were 200
strong and this year there were over 2,000 delegates in Las Vegas.

Taking a quick look at the attending delegates, the audience were about

30% International representing 48 countries. Of the International
delegates, the split was about 2/3 European and 1/3 Asia/Pacific although
there were delegates representing all of the world's continents.

In the pre-conference summits, deployment and differentiation were
the subjects of the day. The vendors spread the spectrum from silicon
clients to next generation tandems. Many companies discussed new features
and applications for their clients or subscribers, while others focused
on the lessons learned through their experience of building the next
generation central office or implementing services such as prepaid
calling cards or defending against fraud.

At the opening of the conference, the winners of the Spring '99 Cool Apps
Contest were announced. The winning products for this contest included:
eMeeting (http://www.emeeting.net), MMCX (http://www.lucent.com)
and the Andrea ConnectSolutions Personal Computer Telephone Interface
(http://www.andreaelectronics.com)

The conference started with a \"WOW\" presentation provided by Reed Hunt
(you can listen to his Industry Perspective at:
 http://pulver.com/von99/hundt99.ram) Reed spoke of the need to nurture
the industry and allow Voice on the Net to continue to grow.
His speech was followed by Jim Crowe's perspective on the fact that
the industry can't help but grow. As the benefits of Moore's law
integrates into the network, price points will be significantly affected
and the applications provided by using IP will be developed by end
users and software developers independent of carriers.

Fun references to the \"Dark Side\" were made during the Wednesday Morning
Industry Perspectives. One thing, which I found particularly ironic was
that the following night at our \"All Conference Party\" at the
Harley Davidson Cafe, John Cafferty was the featured artist, and he is
known for singing the hit song \"On the Dark Side\".

The breakout sessions showed that the protocol wars were no longer being
fought over control but splitting into specific camps of implementations.
And, with each camp were work efforts to gain interoperability and to provide
killer applications. One specific implementation was featured in the
cable industry where cable modems were being used to provide PSTN
service. Other companies showed how they had targeted PBX interfaces to
enable extensions off premise to match the IP world's ubiquity.

Our exhibit hall was our largest to date with 104 exhibitors from all
over the world showcasing their respective VON technologies. There were
quite a number of press announcements associated with the conference. I
counted over 50 related news announcements at the conference. Most of
these announcements were posted to the news section at
pulver.com (see http://pulver.com/news).

During the conference we also had special presentations during lunch
from Phil Hellmuth (http://www.philhellmuth.com) and the Israeli Embassy.

For those of you who attended our party, I hope too felt the energy
that seemed to fill the room when John Cafferty was on stage. Special
thanks to those who came on stage to help sing the VON Conference
Anthem \"Mustang Sally\". (Special thanks to John Cafferty for allowing us
to continue this party tradition.)

I have posted the presentations that were provided
to us by the speakers. Please feel free to visit:
(http://pulver.com/von99/request.htm) to download the presentations
from the conference.

I've also just started working on the content for Fall '99 Voice on the
Net. If you would like to speak at Fall '99 VON in Atlanta, please take
a moment and submit your speaking proposal to:
(http://pulver.com/von99/fall99/speaking.html). Please be sure to send
in your speaking proposals by May 28th.

Spring '99 Cool Apps Winners

On April 14th, at Spring '99 Voice on the Net the winners of the Spring
'99 Cool Apps Contest were announced. Over forty entries were received.

Special thanks goes to the Contest Judges: Louis Trager, Interactive Week;
Laurie Gooding, Rockwell Electronic Commerce; Joe Rinde, MCI Worldcom;
Chris Bajorek, CT Labs; and Ross Baldari, Morgan Stanley - Dean Witter.

The contest sponsors included: pulver.com, Dialogic Corporation and
ITXC.

The contest gave out awards for three categories:

1. Public Network Enhanced Services Applications
2. Customer Premise Applications
3. End User Implementations

And the Winners were...

Category 1. Public Network Enhanced Services Applications:

Winner   - Emeeting, WTS, Texas, USA, (http://www.emeeting.net)
Runner Up - Cosmocall, CosmoCom, NY, USA, (http://www.cosmocom.com)

Category 2. Customer Premise Applications:

Winner   - MultiMedia Communications eXchange Server (MMCX),
        Lucent Technologies, NJ USA, (http://www.lucent.com)

Runner Ups - LiveContact, ServiceSoft Technologies, Ontario, Canada
Tie (1)   (http://www.livecontact.com)

  (2) - PNX ACD, PakNetX, NH, US, (http://www.paknetx.com)

Category 3. End User Implementations

 Winner   - The Andrea ConnectSolutions Personal Computer Telephone
       Interface (PCTItm)
       Andrea Electronics, NY, USA, (http://www.andreaelectronics.com)

 Runner Up - Roger Wilco(tm) (version 0.12p2)
       Resounding Technology, MA, USA, (http://www.resounding.com)

Special thanks to all of the companies that participated in the contest.
There will be a Fall '99 Cool Apps Contest. Contest details will be
posted at pulver.com in the beginning of June, 1999.

SIP is Happening

A week before Spring '99 VON, the first SIP Bakeoff took place at Columbia
University. In a landmark event held at Columbia University in
New York City last week, eighteen engineering groups representing
fourteen leading vendors and research organizations met to jointly test
the operation of their Internet telephony products.

At the end of the event, nearly all implementations had achieved
interoperability for call setup and media capability negotiation for
multimedia calls. Several were interoperable on the first try, and most
others after minor changes or bug fixes were made. Systems being tested
included user agents and servers running on a variety of operating
systems. Some groups had brought dedicated hardware, including
Internet-to-phone gateways and ``Ethernet phones" that plug directly
into local area networks. The event was able to show, for example, that
subscribers can move from location to location, (anywhere on the
Internet), with phone calls following them automatically, regardless of
the provider of the hardware or software. Users could also forward
calls to any Internet destination or telephone number. Some groups
also tested advanced features such as call screening and user
authentication.

Organizations participating in the SIP interoperability testing came from
the US, Canada, Sweden, Finland and the UK and included, among others:
3Com, Alcatel, Cisco, British Telecom, Columbia University, Dialogic,
dynamicsoft, Ellemtel, Ericsson, Helsinki University of Technology,
Hewlett-Packard, Lucent, Mediatrix, Nortel, and Pingtel.

Look out for the PMCC....

The Packet Multimedia Carrier Coalition (PMCC), a group of service providers with packet voice business interests, is ramping up their interoperability testing and specification efforts. The group, which includes some of the biggest names in telecom, is putting the finishing touches on an H.225-based Gateway Interoperability Spec for RTP, with additional specs for MGCP and SIP coming out this Summer. The group intends to sponsor interoperability testing in a shared lab and is putting together packet multimedia Network Access Points for carrier-to-carrier traffic exchange. This team is laying a foundation for real carrier to carrier interoperability and voice traffic exchange on IP Networks.

What's in a Standard?

Just about anybody can test products and technology in their labs and on their private networks. But in the end it will be the collective voices of the packet telephony service providers and Enterprise users who will drive the future of VON standards.

Standards that are only supported by vendors and are not used outside of trade shows and press releases never become the real standard, even if they are widely supported and get a lot of supplementary lip service from the industry. One doesn't have to look very far at other industries to see this happen time and again.

In some ways it is the VON Protocols that divide the world boundaries these days...at least on the surface. The European NextGen Telco Industry seems to have adopted H.323 as their short-term tactical standard and have started deploying services based on H.323. Just take a look at the work efforts of Telnor Nextel and Sonera for examples of this ground breaking work. In North America, it seems that MGCP and SIP currently are the favored protocols, at least from the RFPs and Statements from executives from Level 3 and MCI Worldcom.

Assuming that Firewall products which support H.323 move from slideware into software sometime soon, look for H.323 to continue to be the default protocol for VON in the Enterprise.

The H.323, SIP and MGCP breakout sessions at Spring '99 VON were very popular. One thing that I got out of Spring '99 VON was that there were 22 vendors who have announced support for MGCP.

While some people may feel that a \"standard\" has to be blessed from a certain organization before it can become a standard, the internet has changed the rules of this game.

Proposals for new protocols will continue to evolve as this industry matures. The challenge for many equipment vendors is to understand that

their customers need solutions today to deploy services tomorrow. The customers who demand support for protocol X today will demand support for protocol Y tomorrow. The equipment vendors who are able to deploy protocol agnostic solutions which can support today's protocols and tomorrow's protocols while at the same time not requiring the purchased equipment to be thrown out will be the real winners in this space.
Now is not the time to have your engineers wearing digital blinders.
This is not the time to just focus on one solution, one protocol.

At VON Europe '99, I have decided create a new pre-conference workshop called \"Navigating the Crossroads to Interoperability\". The purpose of this workshop is to provide the delegates with an up to date snapshot of all of the relevant work that has been going on in various industry groups during the past year. It was designed for the person who wants to know what has been going on but hasn't had the time to attend all of the relevant meetings along the way. If you are responsible for setting the direction of the protocols your company supports or will be supporting, I'd suggest you consider attending this workshop. For details please see (http://pulver.com/europe99/navigating.html)

Min-X Eliminates Brokerage Commissions

On April 12th, the second Min-X Dealer meeting was held at the Rio Hotel in Las Vegas. Over 25 International ITSPs attended the meeting. The meeting provided a forum for the Min-X Dealers to meet with each other in advance of Spring '99 VON.

For those of you tracking the activities of Min-X.com, The Minutes Exchange, I just wanted to let you know that Min-X.com will no longer be charging commissions for any deals posted to the Min-X.com website or for any deals which were closed as a result of our dealer meetings.

When Min-X was formed, it was my belief that I needed to charge commissions in order for people to take me seriously. Now that The Minutes Exchange has a critical mass of membership, I feel the need to charge commission is gone.

Instead of charging commissions, the Min-X Dealer contract has been changed to reflect the new requirement for Min-X Dealers to send at least one delegate to one Min-X Dealer meeting during a calendar year in order to maintain Min-X membership.

In addition, the Switched PSTN Minutes Desk at Min-X is now open. Qualified Min-X Dealers will be posting their PSTN rates to selected destinations over the next few weeks.

The next Min-X Dealer meeting will be taking place on June 20th in Helsinki.

Announcement: The pulver.com Open Test Network

The pulver.com Open Test Network:
  The Network for Public Interoperability Testing for the VON Industry

At Spring '99 VON, I announced the formation of the pulver.com Open Test
Network. The pulver.com Open Test Network is a site on the Internet
where vendors and service providers can utilize VoIP equipment freely.
Many companies find it hard to utilize corporate or internal networks
for testing because of security concerns. Security devices such as
firewalls and proxy servers often have to be properly configured to
enable VoIP testing. Planning, configuring and getting approval to
implement the test can drag on for months and months.

The Open Test Network is unrestricted and thus enables companies to test
outside their internal networks. The site can be used for demonstrations
and as a reference point for company and inter-company testing. By
providing this location, I believe vendors and service providers will
have a common ground to help progress the emerging standards.

During the past two years, telecommunications companies throughout the
world, together with Incumbent Carriers and Internet Service Providers,
have taken advantage of the convergence between telecommunication and
internet technologies to build a new class of telecommunication services.
One major feature that is still missing is widespread Interoperability
between equipment vendors and the ability for Service Providers embracing
IP Telephony to seamlessly connect their networks with other service
providers.

The pulver.com Open Test Network has been established to provide a free
resource to qualified members of the VON Industry and will hopefully
help accelerate widespread interoperability by equipment vendors. By
being both vendor neutral and service provider neutral we offer the
industry a unique opportunity to address issues which many others are
experiencing. By being Protocol Agnostic, our Open Test Network will be
a place where vendors supporting: SIP, H.323, iNOW!, OSP, MGCP, and other
leading protocols can place equipment and conduct virtual ad-hoc
interoperability testing and demos 24 hours a day, 7 days a week.

Participation is open, like the network itself, to any qualifying vendor
in the VoIP community. As of April 15th, the following companies have
expressed support for the pulver.com Open Test Network and will be
providing equipment for the network and/or plan to take advantage of the
resource for their own in-house testing needs: Act Networks, Analogical
Systems, Inc., Bell Atlantic, Brooktrout, Cisco, Delta Three, Dialogic,
ECI Telecom, Ericsson, GRIC, Innomedia, Level 3 Communications, Inc.,
Lucent Technologies, Motorola, Nuera, OzEmail Interline, RADCOM, Sun
Microsystems, Telenor Nextel, VIP Calling, Vocaltec and Xybridge.

If you would like to join the pulver.com Open Test Network, please fill out
the application at (http://pulver.com/testnetwork/join.html).
pulver.com will begin accepting equipment from participating vendors the
week of June 6, 1999.

At VON Europe '99, the pulver.com Open Test Network will be debuting on
the exhibit floor. If your company has joined the Open Test Network and
you would like to have equipment showcased in Helsinki please let us know.